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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/654,376	09/01/2000	Onur Tackin	36794/CAG/B600	6658
23363	7590	05/04/2005	EXAMINER	
CHRISTIE, PARKER & HALE, LLP			FERRIS, DERRICK W	
PO BOX 7068				
PASADENA, CA 91109-7068			ART UNIT	PAPER NUMBER
			2663	
DATE MAILED: 05/04/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/654,376

Applicant(s)

TACKIN, ONUR

Examiner

Derrick W. Ferris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-44 and 46-88 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-9, 11-17, 19-27, 29-35, 37-43, 46-51, 53-59, 61-69, 71-77, 79-88 is/are rejected.
- 7) ☒ Claim(s) 2,10,18,28,36,44,52,60,70 and 78 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

1. This Office action is in response to applicant's paper filed 1/10/2005. **Claims 1, 2, 4-44, and 46-88** as amended are still in consideration for this application. Applicant has amended claims 1, 4, 5, 7-9, 11, 12, 14, 15, 17, 19, 20, 22, 23, 32, 33, 40, 41, 43, 46-51, 53, 54, 56, 57, 59, 61, 62, 64, 65, 74, 75, 78, 82, and 83. Applicant has canceled claims 3 and 45.
2. Examiner **withdraws** the claim objection. Examiner thanks applicant for making the necessary correction.
3. Examiner **withdraws** the 112-first paragraph rejection(s).
4. Examiner **withdraws** the anticipated rejection to *Hardwick* and corresponding rejections based on the claims as necessitated by amendment. As such, please find the new rejection below. Examiner also thanks applicant for pointing out the differences in claim 2 as well. As such, please see the allowable subject matter below.
5. Examiner does **not withdraw** the obviousness rejection and corresponding rejections to *Hardwick* in view of *Barghouti* for claims 27, 34, 35-42, 69-76, 77-84 and 85-88. In particular, for independent claims 27, 35, 69, and 77, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). As such, please the rejection using the references in combination.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1, 5-9, 11, 12, 14-16, 17, 19, 20, 22-24, 43, 47-51, 53, 54, 56-59, 61, 62, 64, 65, and 66** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No.

4,282,406 A to *Yato et al.* ("*Yato*") in view of U.S. Patent No. 6,055,499 A to *Chengalvarayan et al.* ("*Chengalvarayan*").

As to **claim 1**, *Yato* in figure 3 discloses estimating the power of a signal and comparing said power to a threshold for the purpose of detecting voice e.g., as either the rate of residual energy for block 12 of the energy in block 10, see e.g., column 3, lines 24-65. *Yato* also teaches auto-correlating the signal in block 3.

*Yato* may be silent or deficient to the further limitation estimating a period of the autocorrelated signal and comparing the autocorrelated signal to a period threshold. In particular, *Yato* may disclose calculating a period as the delay time, see e.g., column 4, lines 41-43 but *Yato* may not clearly teaching comparing the value to a particular threshold.

*Chengalvarayan* teaches the further recited limitation above at e.g., column 2, lines 53-67. In particular, *Chengalvarayan* teaches using a pitch threshold as taught e.g., at column 3, lines 1-26.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Yato* by clarifying that performing pitch tracking after autocorrelation and comparing an estimated pitch value to a threshold are known in the art.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to detect voice. In particular, *Chengalvarayan* cures the above-cited deficiency by providing a motivation found at e.g., column 3, lines 20-25. Second, there would be a reasonable expectation of success since both references perform autocorrelation and detect voice. Thus the references either in singular or in combination teach the above claim limitation(s).

As to **claim 5**, see the rejection to claim 1.

As to **claim 6**, see e.g., column 3, lines 5-10 of *Chengalvarayan*. Note that even though the recommended range is from 66 – 400 Hz, the paragraph further teaches 60+ Hz with respect to the male voice thus teaching the limitation.

As to **claim 7**, *Yato* teaches one period being shifted in the range of 0.25-0.45 at column 4.

As to **claim 8**, *Yato* teaches peak amplitude signal being less than 0.75 to 0.90 at column 5, lines 8-37.

As to **claim 9**, see similar rejection to claim 1.

As to **claim 11**, see similar rejection to claim 1.

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As to **claim 12**, see similar rejection to claim 1.

As to **claim 14**, see similar rejection to claim 6.

As to **claim 15**, see similar rejection to claim 7.

As to **claim 16**, see similar rejection to claim 8.

As to **claim 17**, see similar rejection to claim 1.

As to **claim 19**, see similar rejection to claim 1.

As to **claim 20**, see similar rejection to claim 1.

As to **claim 22**, see similar rejection to claim 6.

As to **claim 23**, see similar rejection to claim 7.

As to **claim 24**, see similar rejection to claim 8.

As to **claim 43**, see similar rejection to claim 1.

As to **claim 47**, see similar rejection to claim 1.

As to **claim 48**, see similar rejection to claim 6.

As to **claim 49**, see similar rejection to claim 7.

As to **claim 50**, see similar rejection to claim 8.

As to **claim 51**, see similar rejection to claim 1.

As to **claim 53**, see similar rejection to claim 1.

As to **claim 54**, see similar rejection to claim 1.

As to **claim 56**, see similar rejection to claim 6.

As to **claim 57**, see similar rejection to claim 7.

As to **claim 58**, see similar rejection to claim 8.

As to **claim 59**, see similar rejection to claim 1.

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As to **claim 61**, see similar rejection to claim 1.

As to **claim 62**, see similar rejection to claim 1.

As to **claim 64**, see similar rejection to claim 6.

As to **claim 65**, see similar rejection to claim 7.

As to **claim 66**, see similar rejection to claim 8.

8. **Claims 4, 13, 21, 46, 55, and 63**, and x are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,216,747 A to U.S. Patent No. 4,282,406 A to *Yato et al.* (“*Yato*”) in view of U.S. Patent No. 6,055,499 A to *Chengalvarayan et al.* (“*Chengalvarayan*”) in further view of U.S. Patent No. 4,331,837 to *Soumagne*.

As to **claims 4, 13, 21, 46, 55, and 63**, *Yato* discloses using a power threshold but is silent or deficient to the range used such as the range –45 to –55 dBm specified in the limitation. *Soumagne* teaches the above limitation when selecting values, see e.g., figure 8. In particular, *Soumagne* selects a range of detecting speech from –42 to –60 dBm thus meeting the limitation. The examiner proposes to modify *Yato* and *Chengalvarayan* to include the above range for detecting voice as taught by *Soumagne*. Examiner notes that it would have been obvious to one skilled in the art prior to applicant’s invention to use the above range in detecting voice. The proposed motivation would be that the power under –60 dBm is usually attributed to silence and power above –42 dBm is usually attributed to noise or invalid sounds. In particular, *Soumagne* teaches the above motivation e.g., at column 11.

9. **Claims 25, 26 and 67-68** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,282,406 A to *Yato et al.* (“*Yato*”) in view of U.S. Patent No. 6,055,499 A to

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*Chengalvarayan et al.* (“*Chengalvarayan*”) in further view of U.S. Patent No. 6,535,521 B1 to *Barghouti et al.* (“*Barghouti*”).

As to **claims 25 and 26**, *Yato* and *Chengalvarayan* may be silent or deficient in specifically mentioning a telephone and telephone network. *Barghouti* teaches a telephone and a telephone network, see e.g., figure 1. In particular, *Barghouti* teaches using voice-activity detectors at gateways in addition to translating a PSTN call to IP, see e.g., column 6, lines 34-55. Examiner purposes to modify *Hardwick* by clarifying that the voice detection module is found in a gateway device which is connected using the PSTN and telephone. Examiner notes that it would have been obvious to one skilled in the art prior to applicant’s invention to further include a telephone and a PSTN as the network. In particular, one skilled in the art would be motivated to communicate with legacy networks such as the PSTN. As such, *Barghouti* discloses the above-motivation e.g., in figure 1. Examiner notes a reasonable expectation of success since both reference disclose detecting voice.

As to **claim 67**, see similar rejection to claim 25.

As to **claim 68**, see similar rejection to claim 26.

10. **Claims 27, 29, 30, 35, 37, 39, 69, 71, 72, 77, 79, 81 and 85-88** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,216,747 A to *Hardwick et al.* (“*Hardwick*”) in view of U.S. Patent No. 6,535,521 B1 to *Barghouti et al.* (“*Barghouti*”).

As to **claim 27**, *Hardwick* may be silent or deficient to using a resource manager to invoke the voice detector during the voice band data exchange, the resource manger further terminating the voiceband data exchange and invoking the voice enhancer when



the voice detector detects voice in the signal. *Barghouti* teaches using a resource manager. In particular, *Barghouti* teaches using a resource manager to process speech frames using a backend module and not use a back end module when processing non-speech frames, see e.g., column 3, lines 45-63. Examiner purposes to modify *Hardwick* by clarifying that a resource manager is used to invoke the voice detector during the voice band data exchange, the resource manager further terminating the voiceband data exchange and invoking the voice enhancer when the voice detector detects voice in the signal. Examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to teach the above-limitation. In particular, one skilled in the art would be motivated to offload the backend modules during periods of non-speech to help reduce the power consumption. As such, *Barghouti* discloses the above-motivation e.g., in the abstract. Examiner notes a reasonable expectation of success since both reference disclose detecting voice.

As to **claim 29**, see *Hardwick* e.g., column 7, lines 30-37 where autocorrelation is used in estimating the pitch period. In particular, see e.g., figure 9 where a threshold is a function of not only the pitch  $P$  and the frequencies in the band, but also the energy of the signal used in detecting voice, see e.g., column 10, lines 27-67. Specifically  $r(n)$  (shown as part of equation 1) is an autocorrelation function used to determine the pitch tracking which predicts the pitch period for the next frame (i.e., estimates the pitch period).

As to **claim 30**, see *Hardwick* at e.g., column 10, lines 27-67 where power is also used in determining if voice should be selected.

As to **claim 35**, see similar rejection to claim 27.

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As to **claim 37**, see similar rejection to claim 30.

As to **claim 39**, see similar rejection to claim 29.

As to **claim 69**, see similar rejection to claim 27.

As to **claim 71**, see similar rejection to claim 29.

As to **claim 72**, see similar rejection to claim 30.

As to **claim 77**, see similar rejection to claim 27.

As to **claim 79**, see similar rejection to claim 30.

As to **claim 81**, see similar rejection to claim 30.

As to **claim 85**, see similar rejection to claim 30.

As to **claim 86**, see similar rejection to claim 30.

As to **claim 87**, see similar rejection to claim 30.

As to **claim 88**, see similar rejection to claim 30.

11. **Claims 38, 73 and 80** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,216,747 A to *Hardwick et al.* ("*Hardwick*") in view of U.S. Patent No. 6,535,521 B1 to *Bargouti et al.* ("*Barghouti*") and U.S. Patent No. 4,331,837 to *Soumagne*.

As to **claims 38, 73 and 80**, see similar rejection to claim 31.

12. **Claims 31 and 74-76**, and x are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,216,747 A to *Hardwick et al.* ("*Hardwick*") in view of U.S. Patent No. 6,535,521 B1 to *Bargouti et al.* ("*Barghouti*") and in further view of U.S. Patent No. 4,282,406 to *Yato et al.* ("*Yato*") and U.S. Patent No. 4,331,837 to *Soumagne*.

As to **claims 31**, *Hardwick* discloses using a power threshold but is silent or deficient to the range used such as the range -45 to -55 dBm specified in the limitation.

*Soumagne* teaches the above limitation when selecting values, see e.g., figure 8. In particular, *Soumagne* selects a range of detecting speech from -42 to -60 dBm thus meeting the limitation. The examiner proposes to modify *Hardwick* to include the above range for detecting voice as taught by *Soumagne*. Examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to use the above range in detecting voice. The proposed motivation would be that the power under -60 dBm is usually attributed to silence and power above -42 dBm is usually attributed to noise or invalid sounds. In particular, *Soumagne* teaches the above motivation e.g., at column 11.

As to **claim 74**, see similar rejection to claim 32.

As to **claim 75**, see similar rejection to claim 33.

As to **claim 76**, see similar rejection to claim 34.

13. **Claims 32-34, 40-42, and 82-84**, and x are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,216,747 A to *Hardwick et al.* ("*Hardwick*") in view of U.S. Patent No. 6,535,521 B1 to *Barghouti et al.* ("*Barghouti*") in further view of U.S. Patent No. 4,282,406 to *Yato et al.* ("*Yato*").

As to **claim 32, 33, and 34**, *Hardwick* is silent or deficient to specific ranges for a characteristic. In particular, *Hardwick* is silent or deficient to a pitch period in the range of 60-400 Hz, one period shift being in the range of 0.25-0.45 of the amplitude of the autocorrelation signal with no shift (i.e.,  $r[0]$ ), and a peak amplitude of the shifted autocorrelated signal being less than 0.75 to 0.90 of the peak amplitude. *Yato* teaches the above limitations. For example, a pitch period is taught at column 1, lines 10-22; one period being shifted in the range of 0.25-0.45 at column 4, lines 30-54; and a peak

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amplitude signal being less than 0.75 to 0.90 at column 5, lines 8-37. The examiner proposes to modify *Hardwick* to include the above-mentioned ranges. Thus the examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include a pitch period in the range of 60-400 Hz, a one period shift being in the range of 0.25-0.45 and the shifted autocorrelation signal being less than 0.75-0.90 of the peak amplitude. In particular, one skilled in the art would have been motivated to include a pitch period between 60-400 Hz since tones are typically found in this period, a one period shift being in the range of 0.25-0.45 and a peak amplitude signal being less than 0.75-0.90 of the peak amplitude to determine if the incoming signal is voice. *Yato* provides the above motivation show e.g., in figures 5a and 5b.

As to **claim 40**, see similar rejection to claim 32.

As to **claim 41**, see similar rejection to claim 33.

As to **claim 42**, see similar rejection to claim 34.

As to **claim 82**, see similar rejection to claim 32.

As to **claim 83**, see similar rejection to claim 33.

As to **claim 84**, see similar rejection to claim 34.

#### ***Allowable Subject Matter***

14. **Claims 2, 10, 18, 28, 36, 44, 52, 60, 70, and 78** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

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15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DWF

Derrick W. Ferris  
Examiner  
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